REMARKS

This is a full and timely response to the outstanding nonfinal Office Action mailed September 24, 2003. Reconsideration and allowance of the application and presently pending claims 1-65, as amended, are respectfully requested.

A. Present Status of Patent Application

Upon entry of the amendments in this response, claims 1-65 remain pending in the present application. More specifically, claim 33 is directly amended. These amendments are specifically described hereinafter. It is believed that the foregoing amendments add no new matter to the present application.

B. Response to Rejection of Claims 1-65 Under 35 U.S.C. §103

In the Office Action, claims 1-65 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Admitted prior art (Fig. 2) in view of *Sciacero et al.* (U.S. Patent 5,502,391), hereinafter *Sciacero*, or *Arnett et al.* (U.S. Patents 6,186,834 or 6,176,742), hereinafter *Arnett* '834 and *Arnett* '835, respectively, and further in view of *Agazzi et al.* (U.S. Patent 4,669,116), hereinafter *Agazzi*. It is well-established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all elements/features/steps of the claim at issue. See, *e.g.*, *In Re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981).

1. Characterization of *Agazzi*

The Office Action, at page 3, alleges that *Agazzi* "teaches a non-linear cancellation of signals including echo or cross-talk in conjunction with data signals in (see col. 1 lines 17-20) by using a capacitive circuit with a plurality of capacitors in parallel which can be activated by means of a relay in conjunction with a controller in (see fig. 3)." Applicants maintain that the Office Action has misconstrued *Agazzi* for at least the reasons described below.

First, *Agazzi* *is limited* in its teachings of "non-linear cancellation of signals including echo **or cross-talk** in conjunction with data signals (see col. 1 lines 17-20)" (emphasis added) as alleged

by the Office Action. For the convenience of the Examiner, the quoted section of *Agazzi* is shown below:

> The purpose of an echo canceller is to remove the "near-end cross-talk" or "echo" signal which feeds through the hybrid into the local receiver, interfering with the data signal coming from a distant transmitter.

Although the phrase "near-end cross-talk" is briefly mentioned in *Agazzi*, a much closer inspection of *Agazzi* is required to determine if the references to "cross-talk" in *Agazzi* correspond to the cross-talk compensation provided by the present invention.

The purpose of *Agazzi* is to "provide an improved echo cancellation circuit and method which can correct for small amounts of non-linear distortion without a large complexity penalty or adaptation speed penalty" (Col. 1, lines 51-55). *Agazzi* discloses that "FIG. 1 depicts subscriber loop modems 10, 10' communicating on ***two wires*** 12" (emphasis added, Col. 2, lines 65-67). Nowhere in *Agazzi* is there any disclosure whatsoever of a second wire pair, or noise induced by other wires onto the *Agazzi* wires 12. Accordingly, Applicants respectfully point out that all teachings of *Agazzi* are ***limited*** to noise resulting from *communications over only the two wires* 12. [As compared to the cross-talk compensation provided by the present invention, which relates to a system wherein "mismatches in the mutual coupling capacitances in the customer's premises wiring system may give rise to undesirable levels of premises end crosstalk (PEXT) interference for which the preferred embodiment of the crosstalk compensator has been designed to mitigate by providing a system and method for the addition of compensating capacitors such that the mismatch is reduced or eliminated" (Application Specification page 10, lines 18-22)].

Closer inspection of *Agazzi* reveals that "each modem circuit 10, 10' of FIG. 1 includes a transmitter 14, a hybrid circuit 16, ***echo canceller circuit 20***, summing circuit 18, and receiver 22. As will be described in more detail, each echo cancellation circuit 20 includes ***means to receive a first bit stream*** corresponding to a first transmitted data signal transmitted via transmitter 14 and hybrid circuit 16 over wires 12. Canceller 20 also includes ***means to receive a second transmitted data signal*** over wire 12. The second data signal ***includes an echo portion*** of the first bit stream having both linear and non-linear components." (Emphasis added, Col. 3, lines 1-11.) Clearly, *Agazzi* is disclosing a system limited to communications over the two wires 12, and is silent about any type of cross-talk induced by another wire pair onto the *Agazzi* wires 12.

Agazzi discloses that "the echo canceller circuit 20 is typically implemented as a digital processor, since its input consists of an inherently digital bit stream" (Col. 3, lines 36-38). However, closer inspection is required to determine precisely the function of the "digital processor" in the *Agazzi* echo canceller circuit 20. *Agazzi* discloses two possible embodiments. "In FIG. 2a, a purely digital echo canceller, using a front end A/D 34, is considered. S/H circuit 32 samples the second data signal at regular intervals and A/D 34 converts it to a digital format. ... Digital adaptive transversal circuit 30 generates a digital representation of the echo portion of the second data signal and digital circuit 36 provides means for subtracting the digital representation from the converted second data signal." (Col. 3, lines 49-52.) "In FIG. 2b, the output of the echo canceller is converted to analog and the cancellation is performed in the analog domain." (Col. 3, lines 63-64.) Accordingly, *Agazzi* employs *signal subtraction or cancellation* in either the digital or analog domains.

Agazzi goes into further detail by disclosing "in Section 2, a method of expanding an arbitrary nonlinear function of a number of bits in a series with a finite number of terms is presented. This expansion serves as the basis for the nonlinear echo canceller design procedures described later. Then in Section 3 the application of this expansion to multilevel transmitted signals, redundancies in the line code, and nonlinearities in the echo channel and the canceller itself are considered. Section 4 gives simulation results for the types of nonlinearities typically encountered in MOS D/A converters. These results indicate that, depending on the number of bits in the D/A converter, a 20 dB or greater increase in echo attenuation can be obtained by incorporating compensation for the D/A nonlinearity with a modest increase in canceller complexity." (Col. 4, lines 48-62.) Accordingly, there is no express disclosure anywhere in this section of *Agazzi* of the use of any type of capacitive device to provide cross-talk compensation induced by another wire pair onto the *Agazzi* wires 12.

Arguably, *Agazzi* Fig. 3 does illustrate elements that may be construed as a capacitor circuit. However, *Agazzi* fails to disclose any functionality associated with the capacitors of Fig. 3. *Agazzi* is limited to teaching, with respect to Fig. 3, that "an alternative solution to the problem in which the transversal filter summation is done by analog circuitry and thus the adaptation can compensate for the D/A nonlinearity is shown in FIG. 3 and has also been demonstrated. (Details of the above are described in more detail in the cross-referenced application entitled

"Echo Canceller Tolerant of Non-Linear Elements", Ser. No. 414,515, filed Sept. 2, 1982.) However, that solution cannot correct other sources of distortion, like pulse asymmetry or saturation in transformers." (Col. 4, lines 17-27.) Accordingly, there is no express teaching whatsoever regarding the functionality of the *Agazzi* capacitors illustrated in Fig. 3. Any such conclusion regarding the functionality of the *Agazzi* capacitors illustrated in Fig. 3 made by the Office Action must be based upon assumptions not supported by documentary evidence.

Agazzi Fig. 10 additionally illustrates elements that may be construed as a capacitor circuit. However, *Agazzi* fails to disclose any functionality associated with the capacitors of Fig. 10. *Agazzi* is limited to teaching, with respect to Fig. 10, that "in order to make the numerical examples realistic, assume the D/A converter is to be implemented in MOS technology using the technique shown in FIG. 10. The four most significant bits are provided by a string of 16 diffused resistors and the remaining bits (from 6 to 9 in simulations) by a binary weighted capacitor array. Because of diffusion concentration gradients, voltage coefficient, and photolithographic mismatches, the resistors cannot be guaranteed to be equal to within one LSB unless laser trimming is used. Thus, in the absence of trimming, a nonlinear transfer characteristic results. This nonlinearity can have a systematic component due to concentration gradients, and a random component due to photolithographic mismatches." (Col. 17, lines 5-17.) Accordingly, there is no express teaching that the capacitors illustrated in Fig. 10 provide compensation. Any conclusions that the capacitors illustrated in Fig. 10 provide compensation made by the Office Action must be based upon assumptions not supported by documentary evidence.

Finally, the equations of *Agazzi* section 3 (Application to Echo Cancellation) employ a term C_k. However, *this term **does not** relate to capacitance. Agazzi* expressly teaches that "C_k is the current transmitted data symbol" (Col. 8, lines 62-63). Therefore, *Agazzi* does not disclose, teach or suggest that any type of capacitance that is used for compensation of any type of cross-talk compensation induced by another wire pair onto the *Agazzi* wires 12.

The Office Action then alleges that *Agazzi* "teaches a non-linear cancellation of signals including echo or cross-talk in conjunction with data signals in (see col. 1 lines 17-20) ***by*** **using a capacitive circuit** with a **plurality of capacitors** in parallel which **can be activated by means of a relay in conjunction with a controller** in (see fig. 3)" (emphasis added). The above characterization of *Agazzi* is not correct, for at least the reasons described below. First, the

illustrated capacitive circuit of *Agazzi* Fig. 3, even though it does appear to illustrate a plurality of capacitors, ***is not disclosed as being used for cancellation of cross-talk***, as implied in the Office Action. The Examiner is respectfully referred to the sections above which clearly demonstrate that *Agazzi* discloses ***nothing*** with respect to the functionality of the capacitors in *Agazzi* Fig. 3 (or in *Agazzi* Fig. 10). Accordingly, the Office Action must necessarily infer the alleged functionality of the *Agazzi* capacitors of Fig. 3 based on assumptions not supported by documentary evidence. Applicants maintain that it is improper for the Office Action to conclude that the functionality of the capacitors in *Agazzi* Fig. 3 (or in *Agazzi* Fig. 10) performs "a non-linear cancellation of signals including echo or cross-talk" because *Agazzi* simply does not support such a conclusion.

Second, *Agazzi* teaches nothing with respect to cross-talk induced by another wire pair onto a first wire pair (the *Agazzi* wires 12) through mutual coupling since *Agazzi* is limited to a two wire system. Accordingly, Applicants maintain that it is improper for the Office Action to conclude such functionality of the capacitors in *Agazzi* Fig. 3 (or in *Agazzi* Fig. 10). *Agazzi* simply does not support such a conclusion. That is, since *Agazzi* teaches nothing about mutual coupling between multiple pairs of conductors (because *Agazzi* is limited to a two wire system), it is improper for the Office Action to conclude that *Agazzi* "teaches a non-linear cancellation of signals including echo or ***cross-talk*** in conjunction with data signals in (see col. 1 lines 17-20) **by using a capacitive circuit** with a **plurality of capacitors** in parallel which can be activated by means of a relay in conjunction with a controller in (see fig. 3)."

Finally, the Office Action alleges that *Agazzi* "teaches a non-linear cancellation of signals including echo or cross-talk in conjunction with data signals in (see col. 1 lines 17-20) by using a capacitive circuit with a plurality of capacitors in parallel which **can be activated by means of a relay in conjunction with a controller** in (see fig. 3)." This allegation improperly implies that the *Agazzi* capacitive circuit is activated by relays in conjunction with a controller *so that the capacitors may cancel cross-talk. Agazzi* is limited to disclosing, with respect to Fig. 3, the phrase "SHR = SWITCH CONTROL LOGIC" which is used to label the block (wherein the data enters the echo canceller configuration illustrated in Fig. 3), and is limited to disclosing by illustration switches coupled to the illustrated capacitors. This phrase "SHR = SWITCH CONTROL LOGIC" does not, by itself, teach, disclose or suggest that *Agazzi* "teaches a non-linear cancellation of signals including echo or cross-talk in conjunction with data signals in (see col. 1 lines 17-20) by

using a capacitive circuit with a plurality of capacitors in parallel which **can be activated by means of a relay in conjunction with a controller** in (see fig. 3)," as alleged in the Office Action. That is, *Agazzi* simply does not support the conclusion of the Office Action that the capacitors are switched by a controller to compensate for cross-talk. If the Office Action is making assumptions about the purpose, functionality and operation of the block labeled with the phrase "SHR = SWITCH CONTROL LOGIC" in Fig. 3, such assumptions are improper because such assumptions are not supported by documentary evidence.

The detailed description of Fig. 3 does not support the allegation of the Office Action that the *Agazzi* capacitors illustrated in Fig. 3 are switched by a controller for "non-linear cancellation of signals including echo or cross-talk in conjunction with data signals in (see col. 1 lines 17-20) by using a capacitive circuit with a plurality of capacitors in parallel which **can be activated by means of a relay in conjunction with a controller** in (see fig. 3)." The entire text of *Agazzi* regarding FIG. 3 is printed below for the convenience of the Examiner:

> An alternative solution to the problem in which the transversal filter summation is done by analog circuitry and thus the adaptation can compensate for the D/A nonlinearity is shown in FIG. 3 and has also been demonstrated. (Details of the above are described in more detail in the cross-referenced application entitled "Echo Canceller Tolerant of Non-Linear Elements", Ser. No. 414,515, filed Sept. 2, 1982.) However, that solution cannot correct other sources of distortion, like pulse asymmetry or saturation in transformers. (Col. 4, lines 17-27.)

As apparent from the text above, there is no teaching to support a conclusion that there is "cancellation of ... cross-talk ... by using a capacitive circuit with a plurality of capacitors in parallel which can be activated by means of a relay in conjunction with a controller in (see fig. 3)" as alleged by the Office Action.

However, the Detailed Description of *Agazzi* does include limited discussion of switches elsewhere. The Examiner is respectfully referred to *Agazzi* from Col. 5, line 60 through Co. 6, line 31. In this section of *Agazzi*, the use of a "tree of switches 52 and adders 50" and "switches 54" are disclosed. These references are not to any switches illustrated in Figs. 3 or 10. There are no other disclosures regarding the use of other switches anywhere in *Agazzi* (and more particularly, to the switches illustrated in *Agazzi* Figs. 3 or 10). Clearly, this section ***does not*** show that *Agazzi* "teaches a non-linear cancellation of signals including echo or cross-talk in conjunction with data signals in (see col. 1 lines 17-20) by using a capacitive circuit with a plurality of capacitors in

parallel which **can be activated by means of a relay in conjunction with a controller** in (see fig. 3)" as alleged in the Office Action.

Summarizing, *Agazzi* is silent about any type of cross-talk induced by another wire pair onto the *Agazzi* wires 12. Such a form of cross-talk ***is not contemplated anywhere*** in *Agazzi* because *Agazzi* is limited to a single wire pair (wires 12). *Agazzi* does not teach, disclose or suggest anything regarding the functionality of the capacitors illustrated in Figs. 3 or 10. In fact, *Agazzi* does not disclose, teach or suggest that any type of capacitance is used for compensation of any type of cross-talk compensation *induced by another wire pair onto the Agazzi wires 12.* Any such functionality of the capacitors must be improperly inferred based upon assumptions that are not supported by documentary evidence. Finally, *Agazzi* does not disclose, teach or suggest capacitor switching by a controller for any purpose whatsoever. (*Agazzi* is limited to disclosing a block labeled with the phrase "SHR = SWITCH CONTROL LOGIC" in Fig. 3, and is limited to illustrating switches in Figs. 3 and 10.) To conclude that the *Agazzi* capacitors are switched by a relay *to compensate for cross-talk noise* is improper because such a conclusion must be inferred by the Office Action based upon assumptions that are not supported by documentary evidence. Accordingly, Applicants maintain that the Office Action has misconstrued *Agazzi*, and that the allegation that *Agazzi* "teaches a non-linear cancellation of signals including echo or cross-talk in conjunction with data signals in (see col. 1 lines 17-20) by using a capacitive circuit with a plurality of capacitors in parallel which can be activated by means of a relay in conjunction with a controller in (see fig. 3)" is not supportable.

2. Independent Claim 1

The Office Action, at page 3, admits that the proposed combination of Admitted prior art (Fig. 2) in view of *Sciacero*, or *Arnett* '834 and *Arnett* '835 fails to "teach selectively coupling by means of a relay or switch to the capacitive circuit." Applicants acknowledge the Office Action interpretation of the above-described references. However, the Office Action then goes further and alleges that "*Agazzi* teaches a non-linear cancellation of signals including echo or cross-talk in conjunction with data signals in (see col. 1 lines 17-20) by using a capacitive circuit with a plurality of capacitors in parallel which **can be activated by means of a relay in conjunction with a controller** in (see fig. 3)."

a. *Agazzi* Does Not Teach the Alleged Technology

For the reasons detailed above in the section characterizing *Agazzi*, *Agazzi* does not support the above alleged conclusion of the Office Action. That is, since *Agazzi* does not disclose, teach or suggest the technology as alleged, the conclusion that "*Agazzi* teaches a non-linear cancellation of signals including echo or cross-talk in conjunction with data signals in (see col. 1 lines 17-20) by using a capacitive circuit with a plurality of capacitors in parallel which **can be activated by means of a relay in conjunction with a controller**" must be inferred by the Office Action based upon assumptions that are not supported by documentary evidence, and is therefore not proper. Since the above-described conclusion regarding the teaching of *Agazzi* is improper, the rejection should be withdrawn for at least this reason alone.

b. *Agazzi* Does not Disclose, Teach or Suggest Recited Features of Claim 1

The proposed combination of Admitted prior art (Fig. 2) in view of *Sciacero*, *Arnett* '834 or *Arnett* '835, in further view of *Agazzi* does not teach, disclose or suggest the feature of a "means for ***selectively actuating said compensating means*** such that said compensating means, when actuated by said actuating means, reduces an undesirable crosstalk signal caused by a mismatch between a ***plurality of mutual capacitive couplings*** associated with said plurality of conductors," with the "compensating means ***providing capacitance***," (emphasis added) as recited in claim 1.

For the reasons detailed above in the section characterizing *Agazzi*, *Agazzi* does not teach, disclose or suggest "selectively actuating compensating means" wherein the compensating means provides capacitance as recited in claim 1. Nor do the *Sciacero*, *Arnett* '834 or *Arnett* '835 references teach, disclose or suggest, alone or in combination, "selectively actuating compensating means" wherein the compensating means provides capacitance.

Therefore, the proposed combination of Admitted prior art in view of *Sciacero*, *Arnett* '834 or *Arnett* '835, and further in view of *Agazzi* does not teach, disclose or suggest the above recited features of claim 1, and a prima facie case establishing an obviousness rejection has not been established. Accordingly, claim 1 is not obvious under proposed combination and the rejection should be withdrawn for at least this reason alone.

c. *Agazzi* is Not Properly Combinable With the Recited References

The Office Action, at page 3, concludes that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Agazzi into that of the combination" or, presumably, the teachings of the Admitted prior art (Fig. 2) in view of *Sciacero*, *Arnett* '834 or *Arnett* '835. Applicants respectfully traverse this conclusion and assert that (a) there is no teaching or suggestion to combine *Agazzi* with the Admitted prior art (Fig. 2) in view of *Sciacero*, *Arnett* '834 or *Arnett* '835, (b) the present application and pending claims have clearly been used as a road map and template to combine the foregoing teachings, and (c) it is clear that none of these references appreciated the advantages of the present invention. More particularly, for at least the reasons detailed below, *Agazzi* ***teaches away*** from the present invention, and is therefore not properly combinable with the proposed references. For at least any one of these reasons alone which demonstrate that *Agazzi* teaches away from the present invention, and is therefore not properly combinable with the other cited references, the rejection of claim 1 is improper, and the rejection should be withdrawn.

First, *Agazzi* ***teaches away*** from the present invention because *Agazzi* is limited to disclosing compensation for a two wire system. *Agazzi* discloses that "FIG. 1 depicts subscriber loop modems 10,10' communicating on ***two wires*** 12" (emphasis added, Col. 2, lines 65-67). Nowhere in *Agazzi* is there any disclosure whatsoever of a second wire pair, or noise induced by other wires onto the *Agazzi* wires 12. Applicants respectfully point out that all teachings of *Agazzi* are ***limited*** to noise resulting from *communications over only the two wires* 12. [As compared to the cross-talk compensation provided by the present invention, which relates to a system wherein "mismatches in the mutual coupling capacitances in the customer's premises wiring system may give rise to undesirable levels of premises end crosstalk (PEXT) interference for which the preferred embodiment of the crosstalk compensator has been designed to mitigate by providing a system and method for the addition of compensating capacitors such that the mismatch is reduced or eliminated" (Application Specification page 10, lines 18-22)]. Therefore, one skilled in the art would not look to *Agazzi* for compensating mismatches in the mutual coupling capacitances between multiple pairs of wires because *Agazzi* ***is limited*** to disclosing compensation for a two wire system. That is, *Agazzi* teaches away from the present invention

because *Agazzi* ***is limited*** to disclosing compensation for a two wire system and because *Agazzi* purposely avoids discussion of cross-talk induced by other wire pairs.

Second, *Agazzi* ***teaches away*** from the present invention because *Agazzi* employs *signal subtraction or cancellation* in either the digital or analog domains. *Agazzi* discloses that "the echo canceller circuit 20 is typically implemented as a digital processor, since its input consists of an inherently digital bit stream" (Col. 3, lines 36-38). However, closer inspection is required to determine precisely the function of the "digital processor" in the *Agazzi* echo canceller circuit 20. *Agazzi* discloses two possible embodiments. "In FIG. 2a, a purely digital echo canceller, using a front end A/D 34, is considered. S/H circuit 32 samples the second data signal at regular intervals and A/D 34 converts it to a digital format. ... Digital adaptive transversal circuit 30 generates a digital representation of the echo portion of the second data signal and digital circuit 36 provides means for subtracting the digital representation from the converted second data signal." (Col. 3, lines 49-52.) "In FIG. 2b, the output of the echo canceller is converted to analog and the cancellation is performed in the analog domain." (Col. 3, lines 63-64.) Accordingly, because *Agazzi* is limited to employing signal subtraction or cancellation in either the digital or analog domains, one skilled in the art would not look to *Agazzi* for compensating mismatches in the mutual coupling capacitances between multiple pairs of wires. That is, *Agazzi* teaches away from the present invention because *Agazzi* ***is limited*** to disclosing compensation by signal subtraction or cancellation in either the digital or analog domains.

Third, *Agazzi* ***teaches away*** from the present invention because *Agazzi* fails to disclose, teach or suggest anywhere *the use of* ***capacitors*** to compensate for cross-talk noise. Arguably, *Agazzi* Fig. 3 does illustrate elements that may be construed as a capacitor circuit. However, *Agazzi* fails to disclose any functionality associated with the capacitors of Fig. 3. *Agazzi* is limited to teaching, with respect to Fig. 3, that "an alternative solution to the problem in which the transversal filter summation is done by analog circuitry and thus the adaptation can compensate for the D/A nonlinearity is shown in FIG. 3 and has also been demonstrated. (Details of the above are described in more detail in the cross-referenced application entitled 'Echo Canceller Tolerant of Non-Linear Elements', Ser. No. 414,515, filed Sept. 2, 1982.) However, that solution cannot correct other sources of distortion, like pulse asymmetry or saturation in transformers." (Col. 4, lines 17-27.) Accordingly, there is no express teaching whatsoever

regarding the functionality of the *Agazzi* capacitors illustrated in Fig. 3. *Agazzi* Fig. 10 additionally illustrates elements that may be construed as a capacitor circuit. However, *Agazzi* fails to disclose any functionality associated with the capacitors of Fig. 10. *Agazzi* is limited to teaching, with respect to Fig. 10, that "in order to make the numerical examples realistic, assume the D/A converter is to be implemented in MOS technology using the technique shown in FIG. 10. The four most significant bits are provided by a string of 16 diffused resistors and the remaining bits (from 6 to 9 in simulations) by a binary weighted capacitor array. Because of diffusion concentration gradients, voltage coefficient, and photolithographic mismatches, the resistors cannot be guaranteed to be equal to within one LSB unless laser trimming is used. Thus, in the absence of trimming, a nonlinear transfer characteristic results. This nonlinearity can have a systematic component due to concentration gradients, and a random component due to photolithographic mismatches." (Col. 17, lines 5-17.) Accordingly, because *Agazzi* completely fails to disclose any functionality of the capacitors illustrated in *Agazzi* Figs. 3 or 10, and in particular fails to disclose using the capacitors to compensate mismatches in the mutual coupling capacitances in the customer's premises wiring system, one skilled in the art would not look to *Agazzi* providing such compensation in accordance with the present invention. That is, *Agazzi* teaches away from the present invention because *Agazzi* fails to disclose, teach or suggest anywhere the use of capacitors to compensate for cross-talk noise.

Applicants have detailed above three reasons why *Agazzi* teaches away form the present invention. These reasons, alone or in combination, clearly demonstrate that one skilled in the art would not look to *Agazzi* for providing compensation in accordance with the present invention. Accordingly, *Agazzi* cannot be properly combined with the Admitted prior art (Fig. 2) in view of *Sciacero*, *Arnett* '834 or *Arnett* '835. Since *Agazzi* is not properly combinable with the references cited in the Office Action, a prima facie case establishing an obviousness rejection cannot be established using *Agazzi* as a reference. Accordingly, claim 1 is not obvious under proposed combination and the rejection should be withdrawn for at least this reason alone.

3. Dependent Claims 2-32

Because independent claim 1 is allowable over the cited art of record, dependent claims 2-32 (which depend from independent claim 1) are allowable as a matter of law for at least the reason

that the dependent claims 2-32 contain at least all features/elements of independent claim 1. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Accordingly, the rejection to these claims should be withdrawn for at least this reason alone.

4. Independent Claim 33

Regarding independent claim 33, the Office Action, at page 4, alleges that "the combination teaches being able to use a plurality of capacitors in parallel in reducing crosstalk and would have been obvious to one of ordinary skill to use any functional equivalent capacitive means. Furthermore, the combination for instance Agazzi ***teaches a plurality of capacitors in parallel under control of a control logic which can activate a capacitors by means of a relay***" (emphasis added). Applicants respectfully traverse this conclusion and assert that the proposed combination does not disclose, teach or suggest "a plurality of capacitors in parallel under control of a control logic which can activate a capacitors by means of a relay."

Applicants believe that the proposed combination fails to teach, disclose or suggest the features of a "plurality of switches, each uniquely coupled to one of said capacitive devices; and a processor controlling said switches, such that when at least one of said switches are actuated by said processor, said corresponding compensating capacitive device is connected between two conductors of a four conductor system, such that said compensating capacitive device reduces an undesirable crosstalk signal caused by a first mismatch between a plurality of mutual capacitive couplings associated with said four conductor system" as recited in claim 33. Applicants respectfully refer the Examiner to the above argument for allowability of claim 1 wherein the failure of *Agazzi* to disclose the above recited features of claim 33 is demonstrated.

Therefore, the proposed combination of Admitted prior art in view of *Sciacero*, *Arnett* '834 or *Arnett* '835, and further in view of *Agazzi* does not teach, disclose or suggest the above recited features of claim 33, and a prima facie case establishing an obviousness rejection has not been established. Accordingly, claim 33 is not obvious under proposed combination and the rejection should be withdrawn for at least this reason alone.

5. Dependent Claims 34-36

Because independent claim 33 is allowable over the cited art of record, dependent claims 34-36 (which depend from independent claim 33) are allowable as a matter of law for at least the reason that the dependent claims 34-36 contain at least all features/elements of independent claim 33. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Accordingly, the rejection to these claims should be withdrawn for at least this reason alone.

6. Claims 37, 48 and 62

Regarding independent claims 37, 48 and 62, the Office Action, at page 4, alleges that "the combination teaches being able to use a plurality of capacitors in parallel in reducing crosstalk and would have been obvious to one of ordinary skill to use any functional equivalent capacitive means. Furthermore, the combination for instance Agazzi ***teaches a plurality of capacitors in parallel under control of a control logic which can activate a capacitors by means of a relay***" (emphasis added). The Office Action concludes that the combination of Admitted prior art in view of *Sciacero*, *Arnett* '834 or *Arnett* '835, "fails to teach selectively coupling by means of a relays or switches to the capacitive circuit" at page 4. Then, the Office Action alleges that "Agazzi teaches a non-linear cancellation of signals including echo or cross-talk in conjunction with data signals (see col. 1, lines 17-20) ***by using a capacitive circuit*** with a plurality of capacitors in parallel which can be activated by means of a relay in conjunction with a controller in (see fig. 3)" (emphasis added). Applicants respectfully traverse this conclusion and assert that the proposed combination does not disclose, teach or suggest "a plurality of capacitors in parallel under control of a control logic which can activate a capacitors by means of a relay" since *Agazzi* does not teach this feature as alleged.

Furthermore, the proposed combination fails to disclose, teach or suggest the feature "wherein said at least one ***compensating capacitive group*** is selectively connected in parallel with at least one pair of conductors selected from said plurality of parallel conductors, and wherein one of said ***at least one compensating capacitive device switches is actuated*** such that at least one of said plurality of compensating capacitive devices is switched such that a first mismatch between a plurality of mutual capacitive couplings associated with said plurality of conductors is reduced" (emphasis added) as recited in claim 37. Similarly, the proposed

combination fails to disclose, teach or suggest the feature of "connecting a ***compensating capacitive device group*** to a pair of conductors selected from said plurality of conductors" and "selecting ***at least one compensating capacitive device*** residing in said compensating capacitive device ***group***" (emphasis added) as recited in claim 48. Also, the proposed combination fails to disclose, teach or suggest the feature of "selecting at least one compensating capacitive device residing in a ***compensating capacitive device group***" (emphasis added) as recited in claim 62.

Nowhere in any of the cited references is there any disclosure, teaching or suggestion of a compensating capacitive group or a compensating capacitive device group as recited in claims 37, 48 and 62, respectively.

An applicant is ordinarily entitled to be his own lexicographer (*In re Castaing*, 429 F.2d 461, 166 U.S.P.Q. 550, 551 (C.C.P.A. 1970). That is, the Applicants are allowed to define terms, regardless of common or technical meaning, so long as the meaning is clear and the definition is not repugnant to the normal usage of the term. In the specification of the present invention the terms below are clearly defined in a permissible manner:

a) compensating capacitive group, and

b) compensating capacitive device group

The Examiner is respectfully referred to the Detailed Description at page 19, line 20 through at least page 20, and to FIG. 6, wherein the recited groups are disclosed. Furthermore, other embodiments of the compensating capacitive groups are disclosed in relation to FIGs. 7-12.

Nowhere is such a compensating capacitive group or a compensating capacitive device group disclosed, taught or suggested in any one of the *Sciacero*, *Arnett* '834, *Arnett* '835, or *Agazzi* references. Therefore, the proposed combination does not teach, disclose or suggest the above recited features of claims 37, 48 or 62, and a prima facie case establishing an obviousness rejection has not been established. Accordingly, claims 37, 48 or 62 are not obvious under proposed combination and the rejection should be withdrawn for at least this reason alone.

7. Dependent Claims 38-47, 49-61 and 63-65

Because independent claim 37 is allowable over the cited art of record, dependent claims 38-47 (which depend from independent claim 37) are allowable as a matter of law for at least the reason that the dependent claims 38-47 contain at least all features/elements of independent claim

37. Similarly, because independent claim 48 is allowable over the cited art of record, dependent claims 49-61 (which depend from independent claim 48) are allowable as a matter of law for at least the reason that the dependent claims 49-61 contain at least all features/elements of independent claim 48. Likewise, because independent claim 62 is allowable over the cited art of record, dependent claims 63-65 (which depend from independent claim 62) are allowable as a matter of law for at least the reason that the dependent claims 63-65 contain at least all features/elements of independent claim 62. Accordingly, the rejection to these claims should be withdrawn for at least this reason alone.

8. Additional Argument for Allowability of Dependent Claims

With respect to dependent claims 5, 12, 19, 28, 35, 39, 50, 54, and 58 nowhere in the proposed combination of the Admitted prior art (Fig. 2) in view of *Sciacero*, *Arnett* '834 or *Arnett* '835, in further view of *Agazzi*, is there any disclosure, teaching or suggestion of using a ***varactor***, as recited in claims 5, 12, 19 and 28. Since the proposed combination of references fails to teach the use of a varactor, a prima facie case establishing an obviousness rejection has not been established. Accordingly, claims 5, 12, 19 and 28 are not obvious under proposed combination and the rejection should be withdrawn for at least this reason alone.

With respect to dependent claim 8 (and claims 9-22 which at least depend from claim 8), nowhere in the proposed combination of the Admitted prior art (Fig. 2) in view of *Sciacero*, *Arnett* '834 or *Arnett* '835, in further view of *Agazzi*, is there any disclosure, teaching or suggestion of using a "***second compensating means*** connected to a ***second pair of conductors*** ..., such that when said second compensation means is actuated by said actuating means, said second compensation means reduces said undesirable crosstalk signal ***caused by a second mismatch*** between a plurality of mutual capacitive couplings associated with said plurality of conductors" as recited in claim 8. Since the proposed combination of references fails to teach the above-recited feature of claim 8, a prima facie case establishing an obviousness rejection has not been established. Accordingly, dependent claim 8, and claims 9-22 which at least depend from claim 8, are not obvious under proposed combination and the rejection should be withdrawn for at least this reason alone.

Similarly, with respect to dependent claim 52 (and claims 52-55 which at least depend from claim 52), nowhere in the proposed combination of the Admitted prior art (Fig. 2) in view of *Sciacero*, *Arnett* '834 or *Arnett* '835, in further view of *Agazzi*, is there any disclosure, teaching or suggestion of the steps of "connecting ***a second compensating capacitive device group*** to a second pair of conductors selected from said plurality of conductors; ***detecting a second mismatch*** between said plurality of mutual coupling capacitances; ***selecting at least one compensating capacitive device residing in said second compensating capacitive device group***; and ***switching said at least one compensating capacitive device residing in said second compensating capacitive device group*** such that said at least one compensating capacitive device residing in said second compensating capacitive device group is connected in parallel with said second pair of conductors ***such that said second mismatch is reduced***" as recited in claim 52. Since the proposed combination of references fails to teach the above-recited feature of claim 52, a prima facie case establishing an obviousness rejection has not been established. Accordingly, dependent claim 52, and claims 52-55 which at least depend from claim 52, are not obvious under proposed combination and the rejection should be withdrawn for at least this reason alone.

With respect to dependent claim 15 (and claims 16-22 which at least depend from claim 15), nowhere in the proposed combination of the Admitted prior art (Fig. 2) in view of *Sciacero*, *Arnett* '834 or *Arnett* '835, in further view of *Agazzi*, is there any disclosure, teaching or suggestion of using a "***third means for compensating***, said third compensating means connected to ***a third pair of conductors*** selected from said plurality of conductors by said connecting means, such that when said third compensation means is actuated by said actuating means, said third compensation means reduces said undesirable crosstalk signal ***caused by a third mismatch between a plurality of mutual capacitive couplings*** associated with said plurality of conductors" as recited in claim 15. Since the proposed combination of references fails to teach the above-recited feature of claim 15, a prima facie case establishing an obviousness rejection has not been established. Accordingly, dependent claim 15, and claims 16-22 which at least depend from claim 15, are not obvious under proposed combination and the rejection should be withdrawn for at least this reason alone.

Similarly, with respect to dependent claim 56 (and claims 57-61 which at least depend from claim 56), nowhere in the proposed combination of the Admitted prior art (Fig. 2) in view

of *Sciacero*, *Arnett* '834 or *Arnett* '835, in further view of *Agazzi*, is there any disclosure, teaching or suggestion of the steps of "connecting ***a third compensating capacitive device group*** to a ***third pair of conductors*** selected from said plurality of conductors; ***detecting a third mismatch*** between said plurality of mutual coupling capacitances; selecting at least one compensating capacitive device residing in said third compensating capacitive device group; and ***switching said at least one compensating capacitive device residing in said third compensating capacitive device group*** such that said at least one compensating capacitive device residing in said third compensating capacitive device group is connected in parallel with said third pair of conductors ***such that said third mismatch is reduced***" as recited in claim 56. Since the proposed combination of references fails to teach the above-recited feature of claim 56, a prima facie case establishing an obviousness rejection has not been established. Accordingly, dependent claim 56, and claims 57-61 which at least depend from claim 56, are not obvious under proposed combination and the rejection should be withdrawn for at least this reason alone.

With respect to dependent claims 22, 25 and 26 (and claims 27-28 which at least depend from claim 26), nowhere in the proposed combination of the Admitted prior art (Fig. 2) in view of *Sciacero*, *Arnett* '834 or *Arnett* '835, in further view of *Agazzi*, is there any disclosure, teaching or suggestion of using the determination means "to instruct said actuating means to concurrently reduce said mismatch, said second mismatch, said third mismatch and a ***fourth mismatch***, said fourth mismatch arising between a plurality of mutual capacitive couplings associated with said plurality of conductors" as recited in claim 22, "means for detecting ... ***more than four mismatches*** arising between a plurality of conductors ... wherein said determination means instructs said actuating means to ***actuate said more than four compensating means*** such that said ***more than four mismatches are reduced***" as recited in claims 25 and 26. Since the proposed combination of references fails to teach the above-recited features of claims 22, 25 and 26, a prima facie case establishing an obviousness rejection has not been established. Accordingly, dependent claims 22 and 25-28 are not obvious under proposed combination and the rejection should be withdrawn for at least this reason alone.

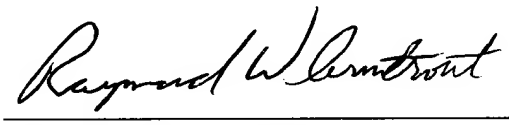
With respect to claims 63-65, nowhere in the proposed combination of the Admitted prior art (Fig. 2) in view of *Sciacero*, *Arnett* '834 or *Arnett* '835, in further view of *Agazzi*, is there any disclosure, teaching or suggestion of logic configured to perform the steps of detecting a second

mismatch, a third mismatch or a fourth mismatch (as recited in claims 63-65, respectively), or of selecting at least one compensating capacitive device residing in a second, third or fourth compensating capacitive device group (as recited in claims 63-65, respectively). Since the proposed combination of references fails to teach the above-recited features of claims 63-65, a prima facie case establishing an obviousness rejection has not been established. Accordingly, dependent claims 63-65 are not obvious under proposed combination and the rejection should be withdrawn for at least this reason alone.

CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that the now pending claims 1-65 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned agent at (770) 933-9500.

Respectfully submitted,



Raymond W. Armentrout
Reg. No. 45,866

THOMAS, KAYDEN,
HORSTEMEYER & RISLEY, L.L.P.
Suite 1750
100 Galleria Parkway N.W.
Atlanta, Georgia 30339
(770) 933-9500